Online Health Information Impacts Patients' Decisions to Seek Emergency Department Care

Ali Pourmand, MD, MPH
Neal Sikka, MD
George Washington University, Department of Emergency Medicine, Washington, DC

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Objective: To investigate the impact of online health information (OHI) and patients' decisions to seek emergency department (ED) care.

Methods: We conducted a survey of a convenience sample of 489 ambulatory patients at an academic ED between February and September 2006. The primary measure was the prevalence of Internet use, and the secondary outcome was the impact of OHI on patients' decision to seek ED care.

Results: The study group comprised 175 (38%) males. Mean age was 33 years old; 222 (45.4%) patients were white, 189 (38.7%) patients were African American, and 33 (6.7%) were Hispanic. 92.6% had Internet access, and 94.5% used email; 58.7% reported that OHI was easy to locate, while 49.7% felt that it was also easy to understand. Of the subjects who had Internet access, 15.1% (1.6, 95% CI 1.3-2.0) stated that they had changed their decision to seek care in the ED.

Conclusion: This study suggests that Internet access in an urban adult ED population may mirror reported Internet use among American adults. Many ED patients report that they are able to access and understand online health information, as well as use it to make decisions about seeking emergency care. [West J Emerg Med. 2011; 12(2):174-177.]

INTRODUCTION

The Internet can be an effective way to distribute information. For instance, it has provided access to online health information (OHI) that had previously been limited to university libraries and expensive medical textbooks. This access has improved health consumers' knowledge and enhanced their participation in their own health.[1, 2]

Many sources of OHI target patients, physicians or researchers.[3-5] There are no current uniform mechanisms to ensure that the OHI is true, accurate, unbiased, or even understandable by a layperson although some sites (e.g., WebMD or MayoClinic.com) do enjoy a level of perceived credibility. Providers often use subscription-based sites, such as MDConsult.com and Uptodate.com, because they are easy to navigate and provide peer-reviewed and evidence-based resources. Patients tend to use free sites and more general health information distilled for laypersons. This division of medical information for providers and patients, in conjunction with the lack of any regulatory oversight, leads to concerns about the quality of OHI. Fortunately, many organizations and medical specialty associations are working on criteria to enhance this quality.[6, 9-12]

Today's patient is often well-informed regarding his symptoms upon arrival at the emergency department (ED) and the diagnoses those symptoms might suggest. Recent studies show that 70% of American adults use the Internet as a source of information on various topics, which can range from sending emails to exploring their hobbies to taking online classes.[11] Among those United States residents who use the Internet, 80% have searched for OHI.[12] However, in one study, 90% of survey respondents stated that their use of the Internet and email for healthcare did not affect their number of contacts within the healthcare system.[13] Many medical emergencies do not allow patients to go online and search for information regarding their illnesses; however, there are a significant number of patients reporting to the ED with

sub-acute or chronic illnesses. Although there is literature regarding general patient access to and use of the Internet in finding OHI, we examine these issues specifically in the ED. Our goals were (1) to learn about access to OHI, specifically by ED patients, and (2) to study the impact that OHI has on patients' decisions to seek emergency care.

METHODS

Under the approval of the Institutional Review Board, we conducted a survey at an urban academic ED in Washington, D.C. between February 2006 and September 2006. This ED treats 57,000 visitors per year. A convenience sample of 489 English-speaking ambulatory patients between 18 and 99 years of age, all of whom sought care from the ED, were enrolled in the study. All critically ill patients (Emergency Severity Index Level 1 and 2) and those arriving by ambulance were excluded. Research assistants (RA) periodically collected 489 surveys from 8AM to midnight. RAs were tasked with collecting data for multiple studies and therefore made best efforts to recruit patients during the period. A limited number of RAs from May to August limited recruitment. The survey required approximately 10 minutes to complete and included questions regarding demographics (e.g., education, citizenship, employment, race, etc.) and access to and use of the Internet. Participants were questioned about their access to email, their Internet connection and usual access location, and their frequency of Internet use. They were asked to rate the ease of accessing the Internet, how frequently they used it to find OHI, and whether they considered such information easy to find and understand. They were specifically asked whether they used OHI in their decision to seek attention from the ED, and whether OHI had ever made them change this decision ("Do you use the health information you find on the Internet to determine whether you should come to the Emergency Department," "Have you changed your decision to come to the hospital based on information that you got from the Internet"?). Participants were also asked about the number of times they had spoken to their physicians about OHI, their level of satisfaction regarding the OHI, and whether they preferred an email follow-up about their medical situation. Responses to the Internet-usage measures were made using numerical values in open-ended response formats (filling in a blank with a number representing the frequency of acts). Numerical response formats reduce arbitrary anchor biases that can occur with lower- and upper-bound numerical rating scales.[14] We asked participants how many times they had engaged in various Internet activities in the past three months, and they responded with a numeric value.

Table 1. Demographic characteristics of Internet users (N= 489)

	%
Age, years	
15-29	47.9
30-44	28.6
45-59	14.7
60-74	3.9
Mean(SD)	33.3(12.8)
Gender	38.0
Male	38.0
Female	62.0
Education	
Lower than Bachelor's degree	46.3
Bachelor's degree and beyond	53.7
Race	
White	45.4
Black	38.7
Hispanic	6.7
Access to Internet	
Yes	92.6
No	7.4
Access to E-mail	
Yes	94.5
No	5.5

SD, standard deviation

RESULTS

The primary data analyses were univariate descriptions and tabulations of patient responses. Data forms were completed for a convenience sample of 489 patients visiting the ED during the enrollment period. Results showed a range in frequency of Internet use among the surveyed patients. The study group comprised 175 (38%) males. The mean age was 33 ± 12 years; 222 (45.4%) patients were white, 189 (38.7%) were African American, and 33 (6.7%) were Hispanic. The gender and age distributions were not significantly different than the 2006 annual ED patient population. Table 1 describes the demographic characteristics of this group.

The survey asked five main questions about Internet and email usage in finding OHI. Ninety-two percent of the respondents stated that they have access to the Internet, while 94.5% reportedly have access to E-mail. Based on our survey data, 37% of patients with Internet access use it to find OHI; 58.7% of the respondents reported that the OHI they reviewed was easy to locate, and 49.7% felt that it was also easy to understand. Table 2 describes the frequency of Internet use in finding OHI.

Of those subjects who have access to the Internet, 15.1% stated that they had changed their decision to seek care in the ED due to OHI. The survey also showed that 31% of respondents would be interested in receiving email follow-ups regarding their ED visits.

Table 2. Frequency of Internet use for health-related information (HRI) [N= 489]

	%
Look on the Internet to find HRI	
Yes	37.2
No	30.3
Neutral*	32.5
Find HRI easy to locate	
Yes	58.7
No	10.2
Neutral	31.1
Find HRI easy to understand	
Yes	49.7
No	17.9
Neutral	32.4
Used HRI to determine whether to come to ED	
Yes	22.9
No	41.9
Neutral	35.2
HRI changed decision to come to ED	
Yes	17
No	83
Interested in E-mail follow-up	
Yes	31
No	69

*Neutral: No impact on their decision or behavior

ED, emergency department

LIMITATIONS

Findings should be interpreted with caution in light of the study's methodological limitations. We surveyed a very small convenience sample of ED patients without rigorous enrollment criteria. All of the data in this study were collected using self-report instruments during certain hours of the day and are therefore limited by all of the constraints and potential biases common to self-reporting.[15] Failure to enroll all eligible patients makes the study susceptible to selection bias, as we were only able to survey the patients who actually came to the ED. It is unclear how many patients with unknown conditions used OHI to decide either to avoid the ED or to postpone their visit. Our study was not capable of addressing the issues of variability in a patients' health knowledge base, or any search criteria performance that may impact patients' discovery and interpretation of OHI.

DISCUSSION

The Internet has become a powerful resource for medical providers. A recent Pew study suggests that patients are increasingly using OHI each year to care for themselves and others.[12] They are becoming more adept in finding OHI and medical resources, as well as in using that information when consulting with their medical provider. However, the quality and context of OHI can play a major role in its applicability. Providers are challenged to help a better-informed health consumer understand OHI, which can be complex or sometimes erroneous.

In this study, ED patients report that they do not have difficulty either in accessing OHI or in understanding that information. In our experience, however, patient interactions often reveal that they do have difficulty understanding OHI. OHI often causes patients unnecessary anxiety regarding symptoms or demand for unnecessary diagnostic tests. The discrepancy in patients' understanding of OHI and the medical providers' perception of their understanding should be further explored. There may be opportunities to develop tools that can assist patients and providers in ensuring that accurate information is exchanged.

Interestingly, a large percentage of surveyed patients reported interest in using email to communicate with a medical provider (Table 2). Ease of Internet access and willingness to use email may have implications for ED satisfaction surveys, quality assurance and follow-up communications. Our study did not address patients' perceptions of security and privacy issues that may occur through electronic communications.

Finally, in our study population, 15.1% of respondents changed their decision to seek emergency care based on OHI. Other studies suggest that OHI does impacts decisions to seek medical attention, but do not specifically look at the impact on emergency care in which a medical evaluation may be more time sensitive. Large numbers of people may base potential life-or-death decisions on OHI, which varies in quality and may be taken out of context.

CONCLUSION

This study suggests that Internet access in an urban adult ED population may mirror reported Internet use among American adults. Many ED patients report that they are able to access and understand online health information, as well use it make decisions about seeking emergency care. We believe that healthcare providers and medical organizations should contribute to ensuring clear, concise, and easily accessible OHI.

Address for Correspondence: Ali Pourmand, MD, MPH, George Washington University Medical Center, 2150 Pennsylvania, Ave NW, Suite 2B, Washington, DC 20037. Email: apourmand@mfa.gwu.edu

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